

valido flante vento à setemptrione ; crassique vapores
ascendere vifi sunt è fluvio portuque vicino.

In thermometro domini de Reaumur, sequentes
mutationes observatæ fuere.

7^h 20' Spiritus vini 12° & dimidium altitudinis
supra terminum congelationis aquæ obtinebat.

h							o
8	12	.	.	.	.	.	13
8	30	.	.	.	.	.	12 $\frac{1}{2}$
8	43	.	.	.	.	.	12 $\frac{1}{4}$
8	55	.	.	.	.	.	11 $\frac{3}{4}$
9	30	.	.	.	.	.	12
10	0	.	.	.	.	.	12 $\frac{1}{2}$
10	40	.	.	.	.	.	13 $\frac{1}{4}$

LXXIII. *An Account of some astronomical
Observations taken at Lisbon by M. John
Chevalier in the Year 1753. By James
Short, M. A. and F. R. S.*

Read March 14, 1754. THIS gentleman mentions two emer-
sions of the satellites of Jupiter,
viz. one of the first, and another of the third, both
observed, in a very clear air, with a Gregorian te-
lescope six feet long. Dr. Bevis, from a great num-
ber of observations, has computed *formulae* of tables for
the times of the immerfions and emerfions of the first
satellite of Jupiter, and which times we have seldom
found to differ from the observations above 10": By
com-

comparing, therefore, the time of the emerfion of the firft fatellite obferved by this gentleman, with the time computed from thefe *formulae*, the difference of longitude between London, at St. Paul's, and the place of obfervation at Lifbon, comes out to be $36' 6''$; and by feveral former correfponding obfervations the difference had been found to be $36' 10''$. By fome obfervations of the fame fatellite, fent me lately by the reverend P. Pezenas at Marfeilles, and which he had received from fome aftronomers at Lifbon, the difference of longitude between London and Lifbon is fometimes $34'$, and fometimes $35'$: But it is to be remarked of thefe gentlemen, that tho' they both obferved at the fame place, and thro' refracting telefcopes of the fame length; yet they fometimes differ from one another a whole minute, in the time of emerfion.

M. Chevalier further mentions the obfervation of the eclipfe of the fun laft October, thro' a telefcope of 15 palms. He faw both the beginning and end, in a very clear air; and fays, that the greateft quantity of the eclipfe was 11 digits and 5 minutes, which he meafured with a micrometer; but, unluckily, has not given us either the diameter of the fun, or that of the moon, which he might have meafured (for the eclipfe was annular), tho' he was at the pains of meafuring all the digits, both in the increafe and decreafe of the eclipfe. He further takes notice, that, at the time of the greateft obfcuracion, the light of the fun was remarkably diminifhed; and that they were able to fee Jupiter, Venus, and fome ftars of the firft and fecond magnitude; but he could not fee Mercury, on account
of

of his proximity to the sun: And that a reflecting speculum, of three palms in diameter, which could melt lead, when placed in its focus, and instantly set wood in a flame; did produce the same effects, even when the sun was seven digits eclipsed; but that, about the time of the greatest obscuration, it was not able to burn wood, tho' held in its focus for some time: And that, at the same time, the air became very cold, the wind blowing hard from the north; and that some vapours, or fog, were seen to rise out of the river and adjacent harbour.

He likewise mentions some alterations in the spirit of wine thermometer of M. de Reaumur, during the eclipse.

The same eclipse of the sun was observed also at Lisbon by A. P. Eusebius da Veiga, professor of mathematics. His times of the beginning and end are somewhat earlier than those of M. Chevalier; and he also makes the greatest obscuration larger, by 3 minutes of a digit.

To his account of this eclipse he subjoins some occultations of stars by the moon, observed by him at Lisbon last year; viz. of Venus, on the 27th of July; of α *Librae*, on the 5th of August; and of β *Capricorni*, on the 5th of October.